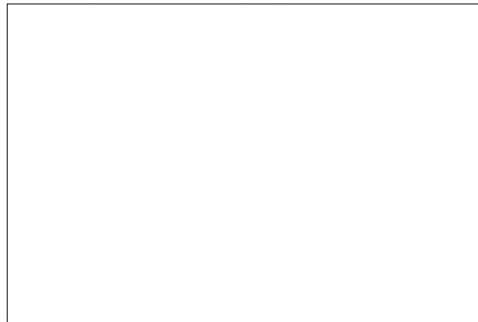


10 October 1955

MEMORANDUM FOR THE RECORD

SUBJECT: Status of Hole-Drilling Projects as of 5 October 1955

1. The Fourth Monthly Meeting of the Hole-Drilling Committee was held on 5 October 1955. Those present were:



25X1

2. The status of the projects at the present time is as follows:

APPLIED PHYSICS DIVISION

25X1

Subject: Masonry Drilling. Proposal was all-inclusive and not specific.

Status: No report on new proposal.

Remarks: Original proposal too general.

National Bureau of Standards

Subject: Wall-thickness Measurement Gauge. Feasibility of Ultrasonic measurement and type of equipment which might be used.

Status: Proposal accepted and work now in progress. Final results expected in 3-4 months.

Remarks: Thickness gauge - unable to find any correlation between wall thickness and resonance. They are investigating pulse-gauging, and will try low-frequencies between 40 and 15 cycles. NBS has been asked to collaborate with [redacted] on construction of thickness gauge utilizing back-scattering of neutrons.

25X1

CHEMICAL DIVISION

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25X1

Subject: Wall-thickness measurement.

Status: Feasibility study and calculations now underway.

Remarks: Will collaborate with [redacted] i.e. provide electronic equipment.

25X1

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CHEMICAL DIVISION (Cont'd)

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[Redacted]

25X1

Subject: Chemical decomposition of concrete and mortar.
Status: Awaiting security approval
Remarks: This company does contract research work on cement and concrete chemistry.

[Redacted]

25X1

Subject: Chemical decomposition of concrete and mortar.
Status: Awaiting security approval.
Remarks: These companies do contract research work on cement and concrete chemistry.

ENGINEERING DIVISION

[Redacted]

25X1

Subject: Dripping and drilling program.
Status: [Redacted] is continuing research on drilling rates with different drill bits and types of stone.

25X1

Remarks: A hand-held unit has been designed and tested. In concrete, five minutes were required to drill 30 inches with a 5/16" drill. The rotary drill was tried on granite (a hammering action is recommended) and 3" was the maximum depth obtainable before dulling caused drill to stop cutting.

Subject: Pipe Pusher Program.
Status: The proposal has been accepted and the contract is being written.
Remarks: This project should not be confused with the small trench digger used for laying wires in the ground. The pipe pusher will be used for laying wires under sidewalks, etc. up to 30 inches in width.

[Redacted]

25X1

Subject: Proposal covers a general study of the present state of the art and consideration of new methods of wall penetration. Suggests work on: (a) Supersonic drilling; (b) Jet of abrasive particles in liquid air; (c) Rubber bit impregnated with diamonds - \$9754 - 6 months.

Status: Proposal has been accepted and the contract is being negotiated by Logistics.

Remarks: They will work on two approaches to silent drilling. (1) attempt to produce drilling bits which are designed primarily for quiet operation rather than the usual economic considerations. (2) Investigate the drilling possibilities of high velocity abrasive particles.

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ENGINEERING DIVISION (Cont'd)

[redacted] 25X1

Subject: Proposal covers a first phase for: (a) Survey of commercial equipment; (b) Tests of borrowed commercial equipment to determine what could be used and what should be developed for our purposes; (c) Reports of results and recommendations - \$4,000 - 4 months.

Status: Proposal has been accepted and contract is being negotiated.

Remarks: The primary emphases will be placed on developing a bicycle-type power source with the chances being good that a crude prototype may be built.

[redacted] 25X1

Subject: The proposal cover the construction of a testing facility to consist of a building (10' x 20') with heat and power. Test walls would be constructed inside the building in order to simulate drilling in a room. Sound level measuring equipment and 20 weeks of testing are included - \$17,000 - 1 year.

Status: A second proposal has been requested and should arrive shortly.

Remarks: A test facility will be set up to include a number of different types of walls to compare penetration methods and thickness gauges. Samples [redacted] have been obtained for use as guides in construction of walls. 25X1

[redacted] 25X1

Subject: Silent alternating current drives and manual drives.

Status: This proposal is still held up by lack of personnel clearances.

[redacted] 25X1

Subject: General proposal.

Status: Their proposal has been received.

Remarks: The proposal is very general. Since the drilling program is pretty well rounded, we will not ask [redacted] to work on it right now. They will be contacted again if new approaches develop. 25X1

[redacted] 25X1

Subject: Explosive projectile such as used by carpenters to nail lumber to concrete.

Status: [redacted] did not submit a proposal because they did not believe that the stud driver principle was feasible for deep hole penetration. 25X1

Remarks: They have been contacted again and asked to reconsider the problem and let us know what would be the maximum possible depth.

TECHNICAL SERVICES LAB.

Subject: Softening of concrete.

Status: Feasibility tests and studies.

Remarks: TSL will test theory that concrete can be softened by subjecting it to sudden extremes of temperature.

Standard Drilling Equipment

obtained from Sears Roebuck

Remarks: Investigating methods to silence this equipment.

Subject: Plaster Drill

Status: Work in progress. Tests should be conducted soon.

Remarks: TSL is investigating the best speeds and techniques for a high speed drill to penetrate plaster without chipping.

25X1

TSS/Chemical Division

Distribution:

- 1 - AC/TSS/RAD
- 1 - C/TSS/ASD
- 1 - C/TSS/ED
- 1 - C/TSS/TSL
- 1 - C/TSS/APD
- 2 - TSS/CD

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